FIG. 1

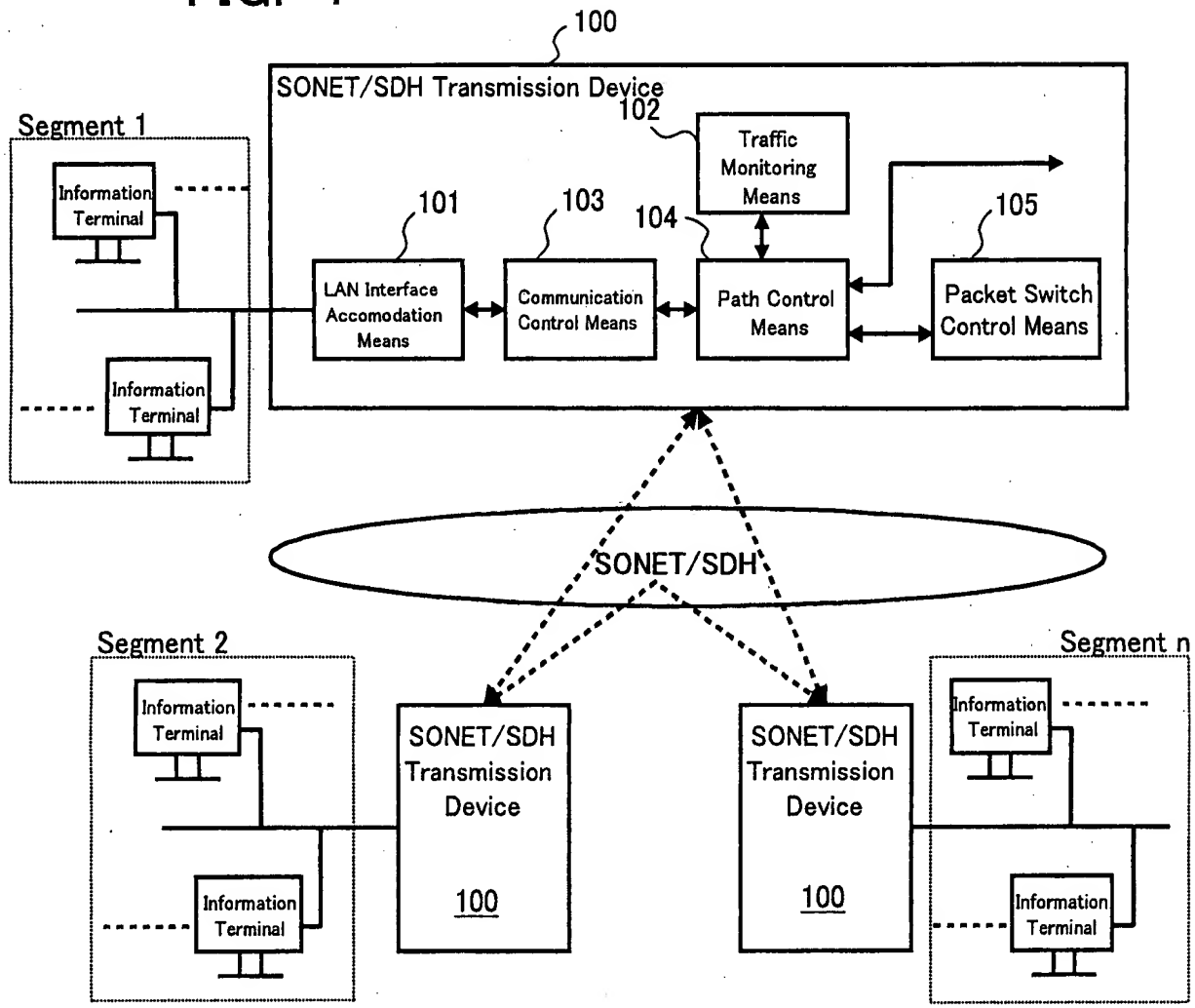
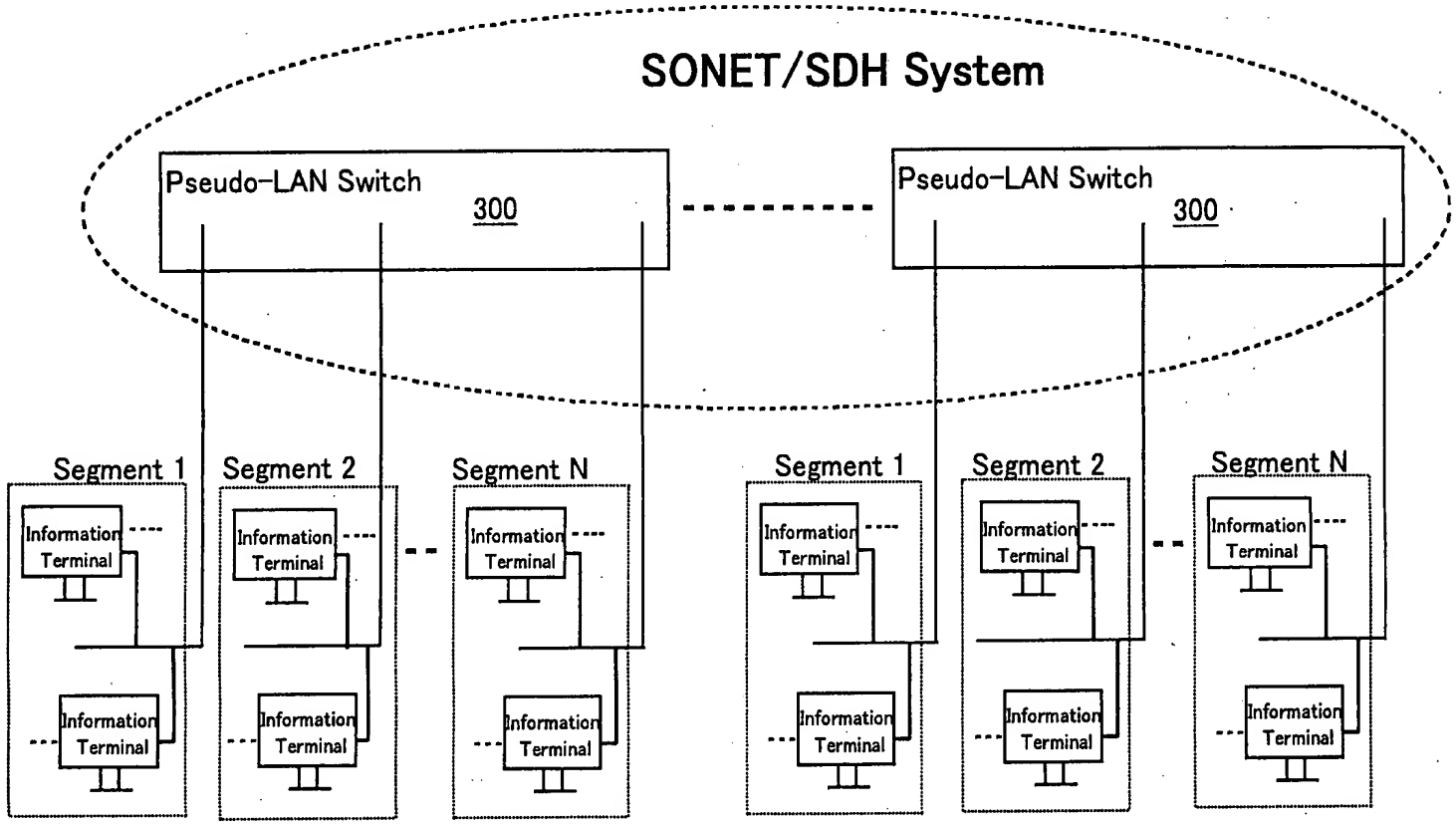

100
SONET/SDH Transmission Device
102
Traffic Monitoring Means
101
103
104
105
LAN Interface Accomodation Means
Communication Control Means
Path Control Means
Packet Switch Control Means
Segment 1
Information Terminal
Information Terminal
SONET/SDH
Segment 2
Segment n
SONET/SDH Transmission Device
100
SONET/SDH Transmission Device
100
Information Terminal
Information Terminal
Information Terminal
Information Terminal

FIG. 2


SONET/SDH System
Pseudo-LAN Switch
300
Pseudo-LAN Switch
300
Segment 1
Segment 2
Segment N
Segment 1
Segment 2
Segment N
Information Terminal

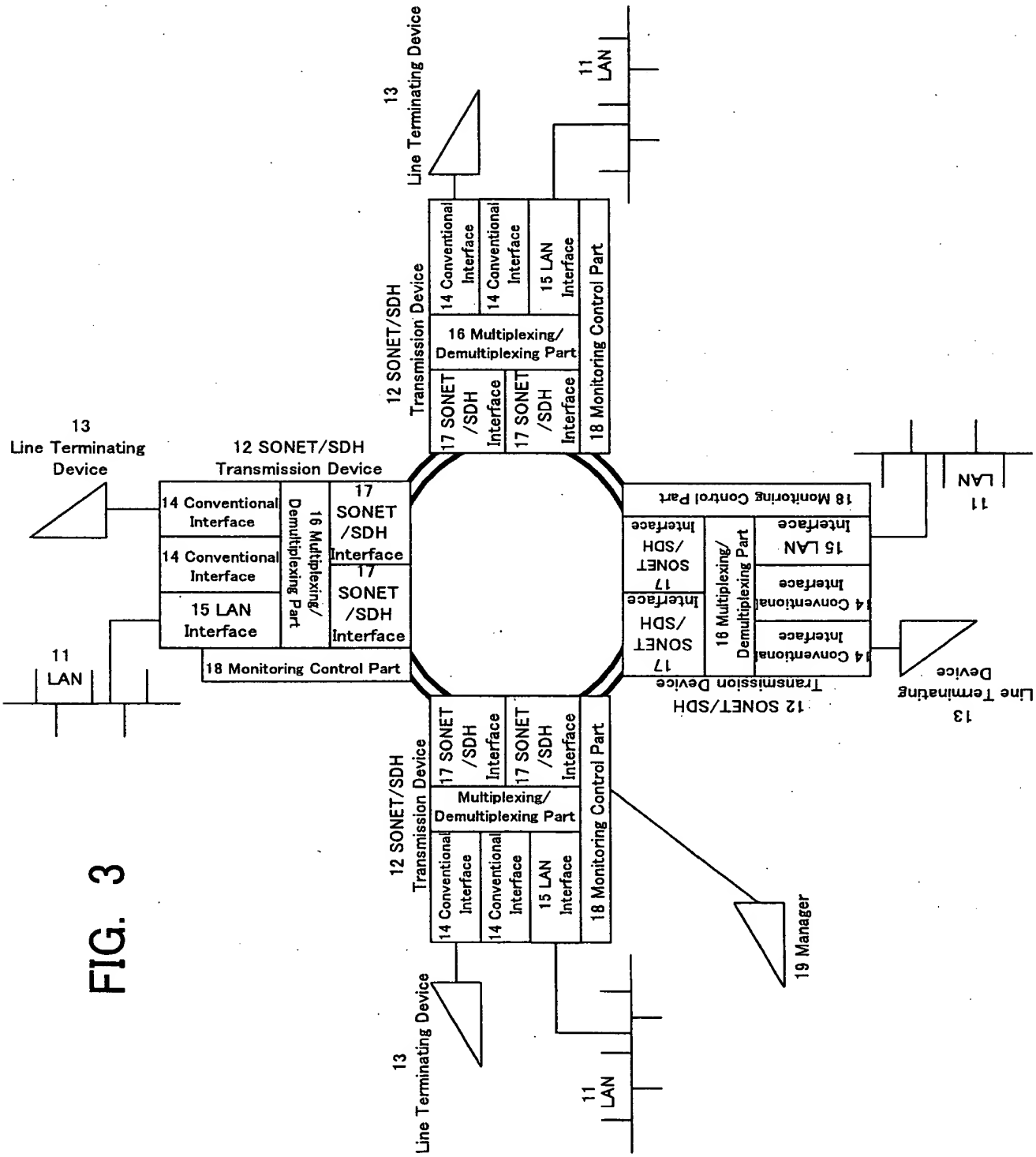

13
Line Terminating Device
12 SONET/SDH
Transmission Device
14 Conventional Interface
14 Conventional Interface
15 LAN Interface
16 Multiplexing/ Demultiplexing Part
17 SONET /SDH Interface
17 SONET /SDH Interface
18 Monitoring Control Part
11
LAN
19 Manager

FIG. 3

FIG. 4

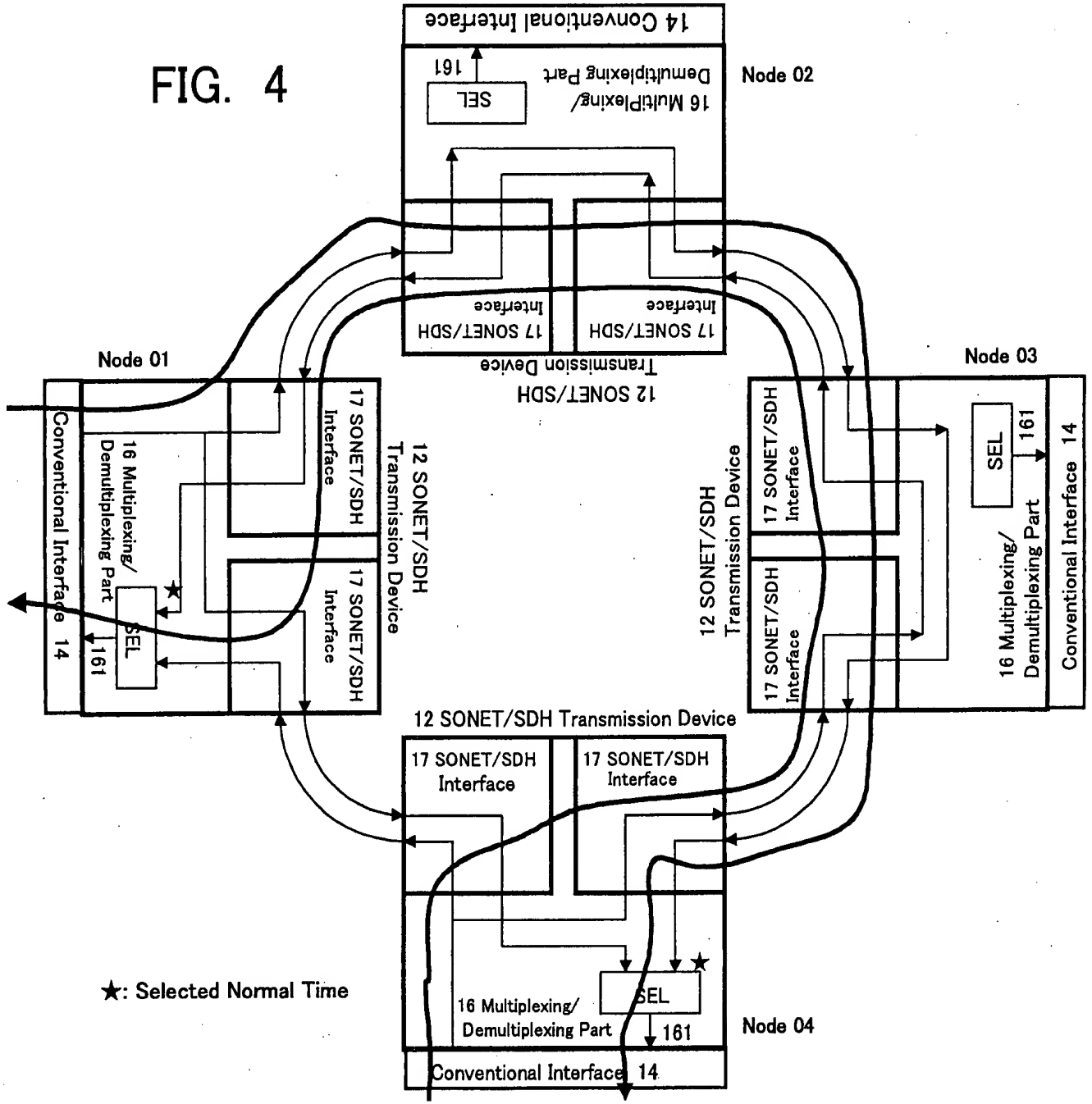
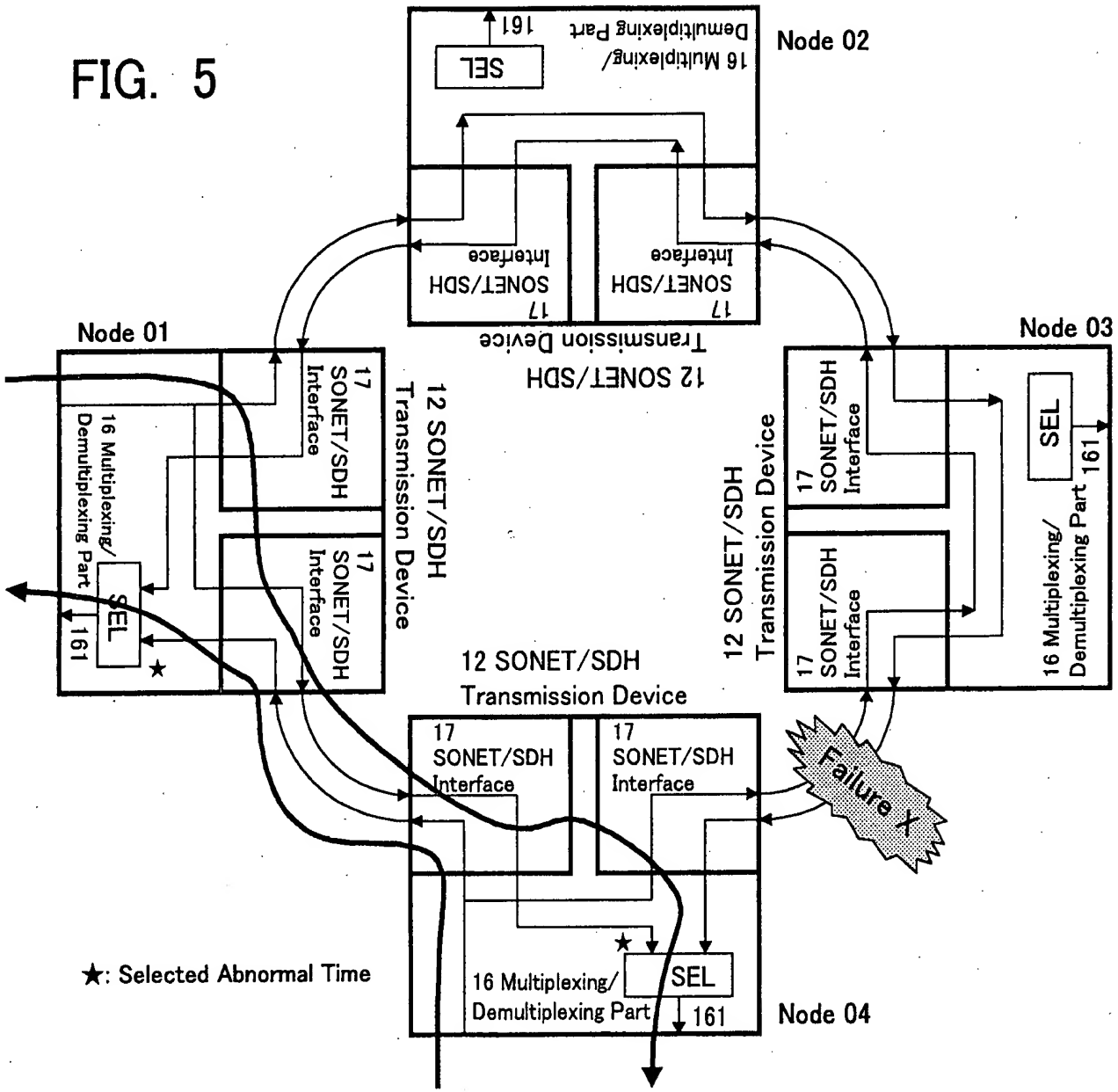

Node 01
Node 02
Node 03
Node 04
12 SONET/SDH Transmission Device
17 SONET/SDH Interface
16 Multiplexing/ Demultiplexing Part
SEL
161
14 Conventional Interface
★: Selected Normal Time

FIG. 5


Node 01
Node 02
Node 03
Node 04
12 SONET/SDH Transmission Device
12 SONET/SDH Transmission Device
12 SONET/SDH Transmission Device
12 SONET/SDH Transmission Device
17 SONET/SDH Interface
16 Multiplexing/ Demultiplexing Part
SEL
161
Failure X
★: Selected Abnormal Time

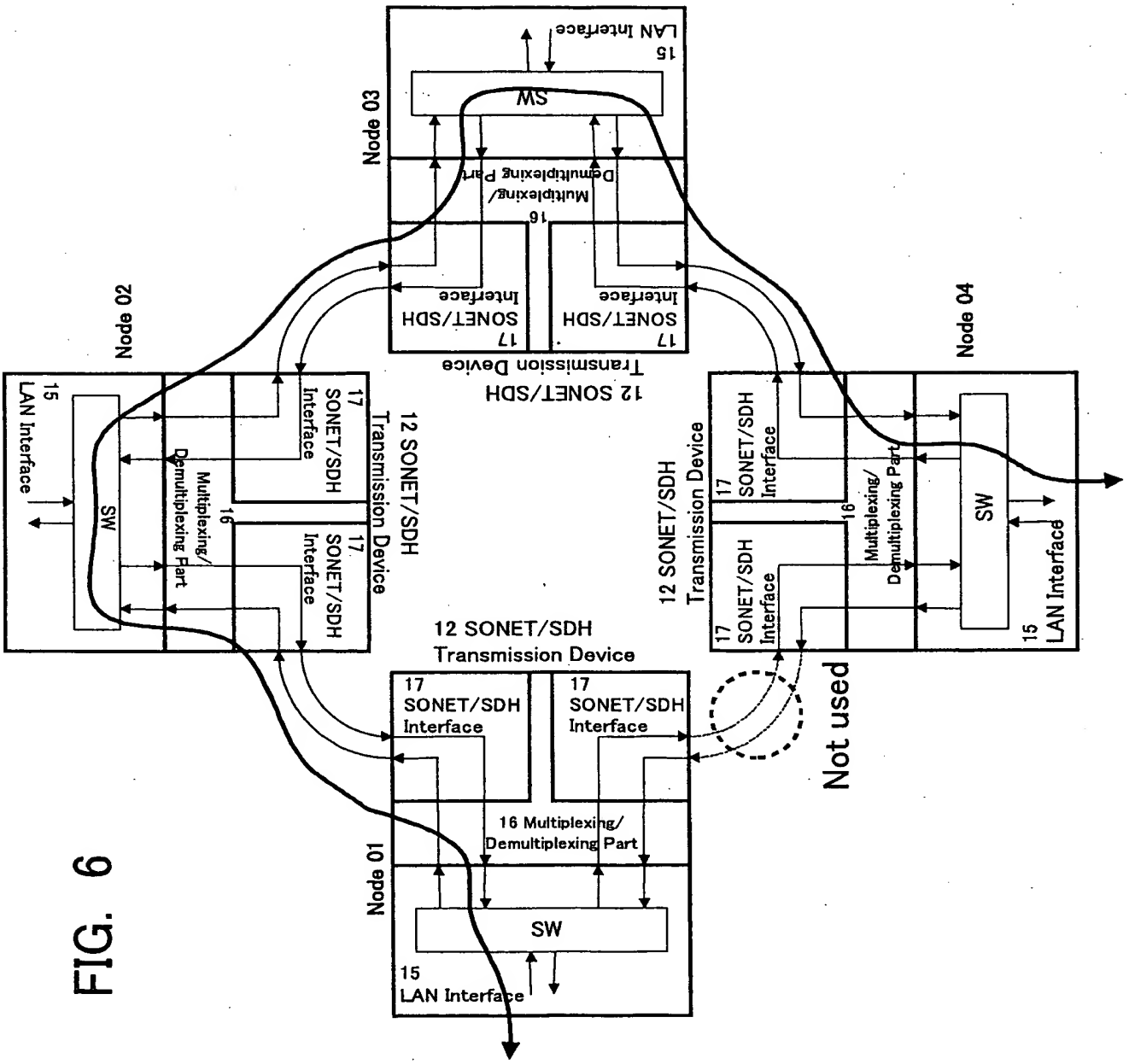
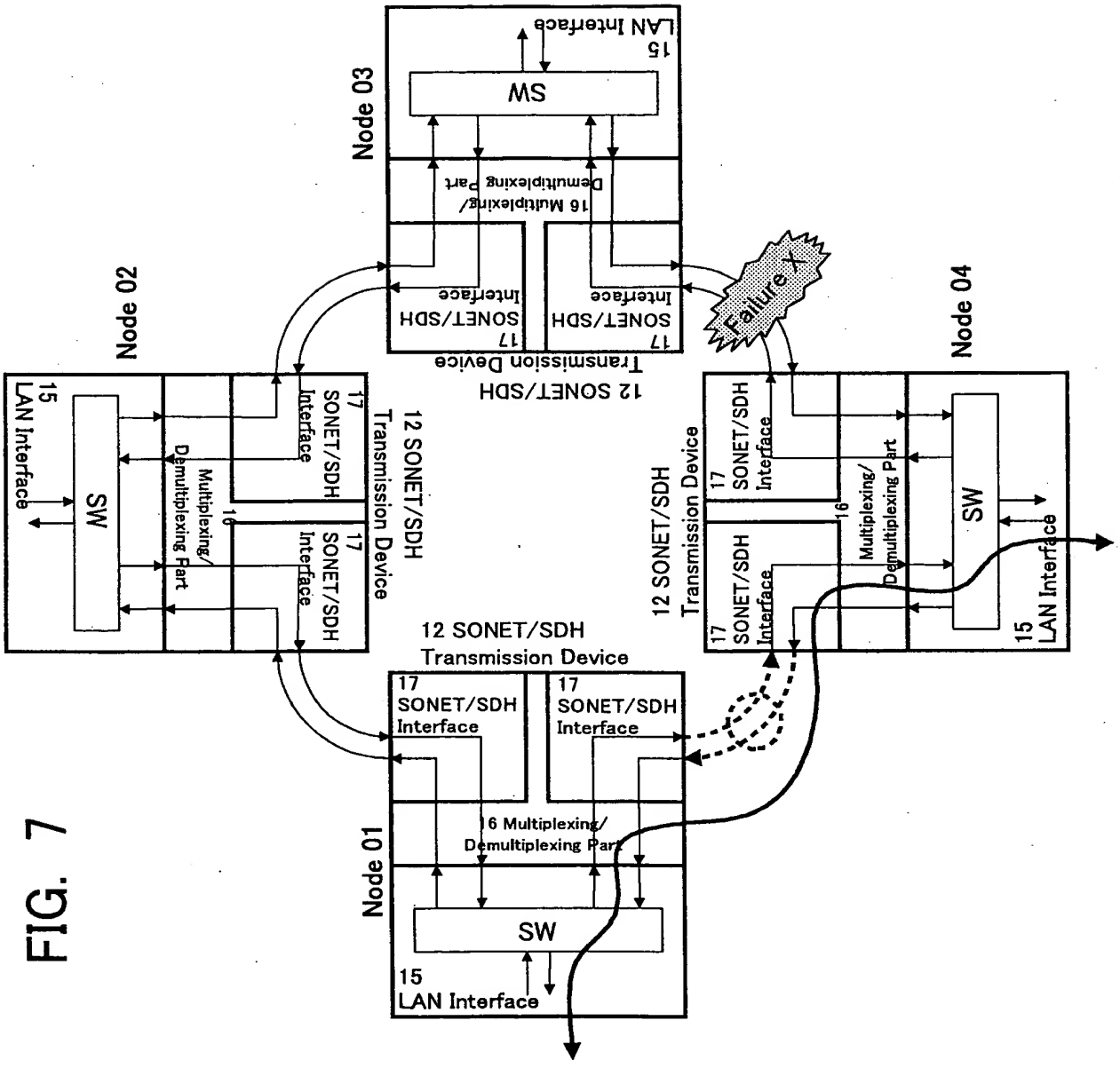

Node 01
Node 02
Node 03
Node 04
16 Multiplexing/ Demultiplexing Part
SW
15 LAN Interface
17 SONET/SDH Interface
12 SONET/SDH Transmission Device
Not used

FIG. 6

FIG. 7


Node 01
Node 02
Node 03
Node 04
12 SONET/SDH Transmission Device
17 SONET/SDH Interface
16 Multiplexing/ Demultiplexing Part
SW
15 LAN Interface
Failure X

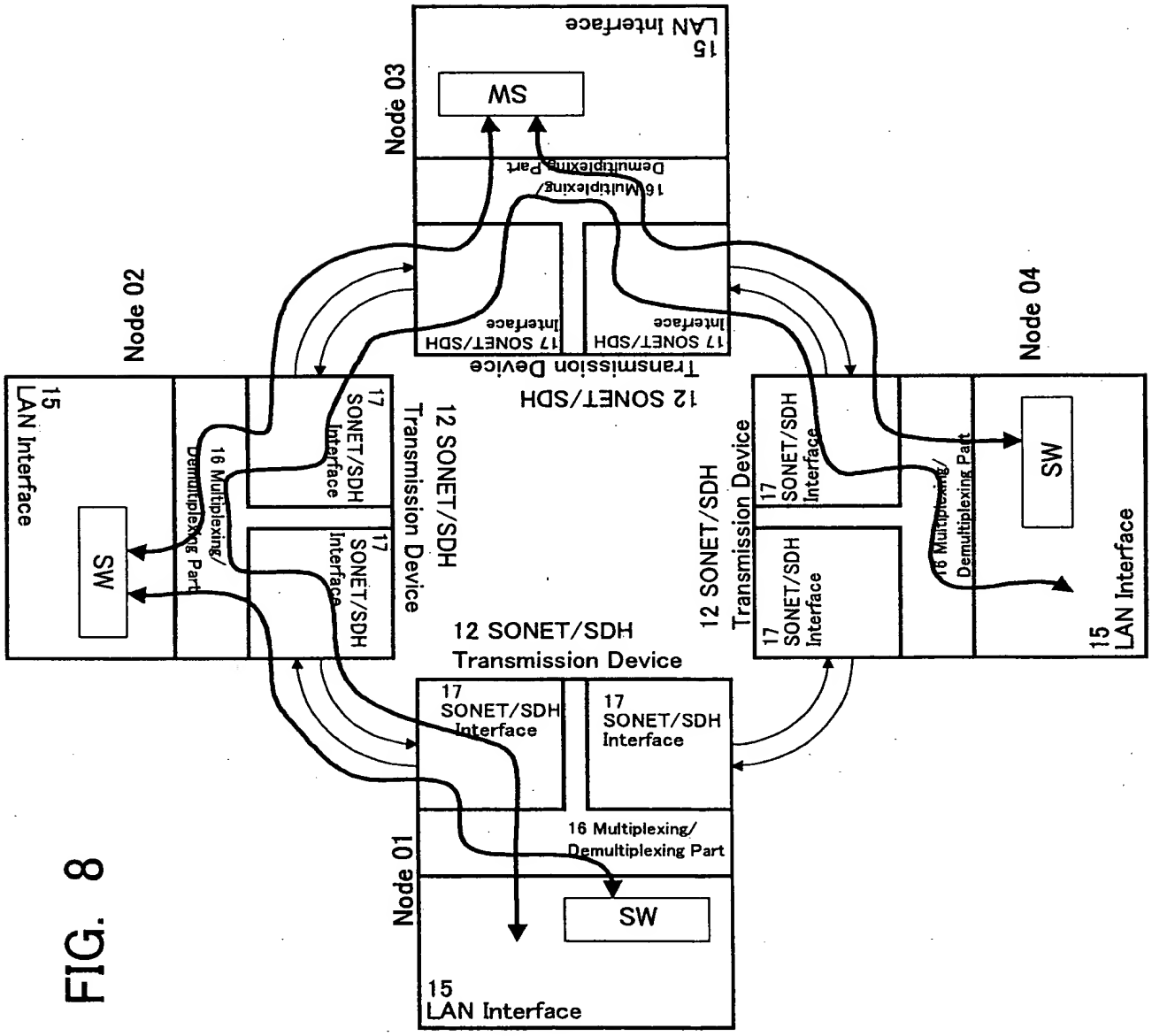

Node 01
Node 02
Node 03
Node 04
SW
MS
15
LAN Interface
16 Multiplexing/
Demultiplexing Part
17
SONET/SDH
Interface
12 SONET/SDH
Transmission Device

FIG. 8

FIG. 9

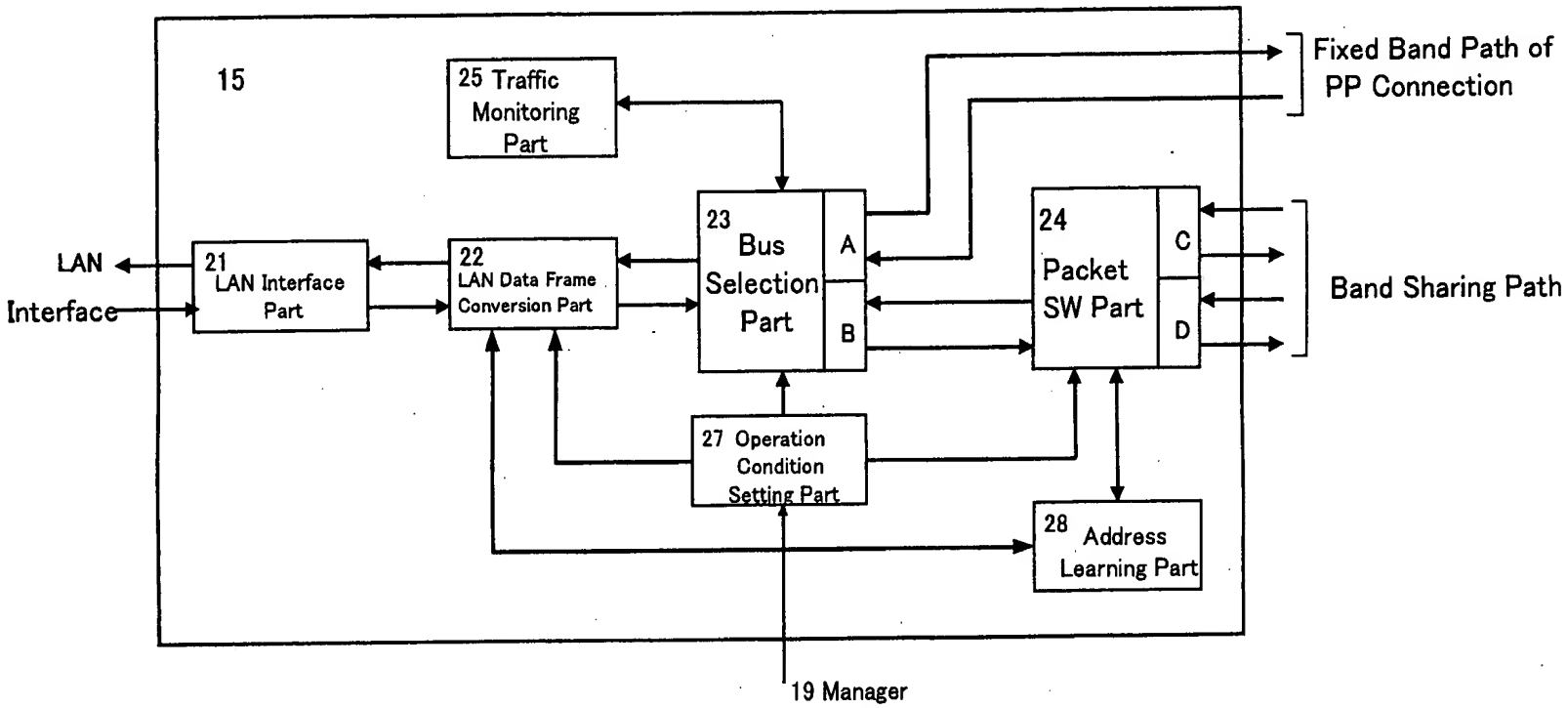

15
25 Traffic Monitoring Part
Fixed Band Path of PP Connection
LAN Interface
21 LAN Interface Part
22 LAN Data Frame Conversion Part
23 Bus Selection Part
A
B
24 Packet SW Part
C
D
Band Sharing Path
27 Operation Condition Setting Part
28 Address Learning Part
19 Manager

FIG. 10

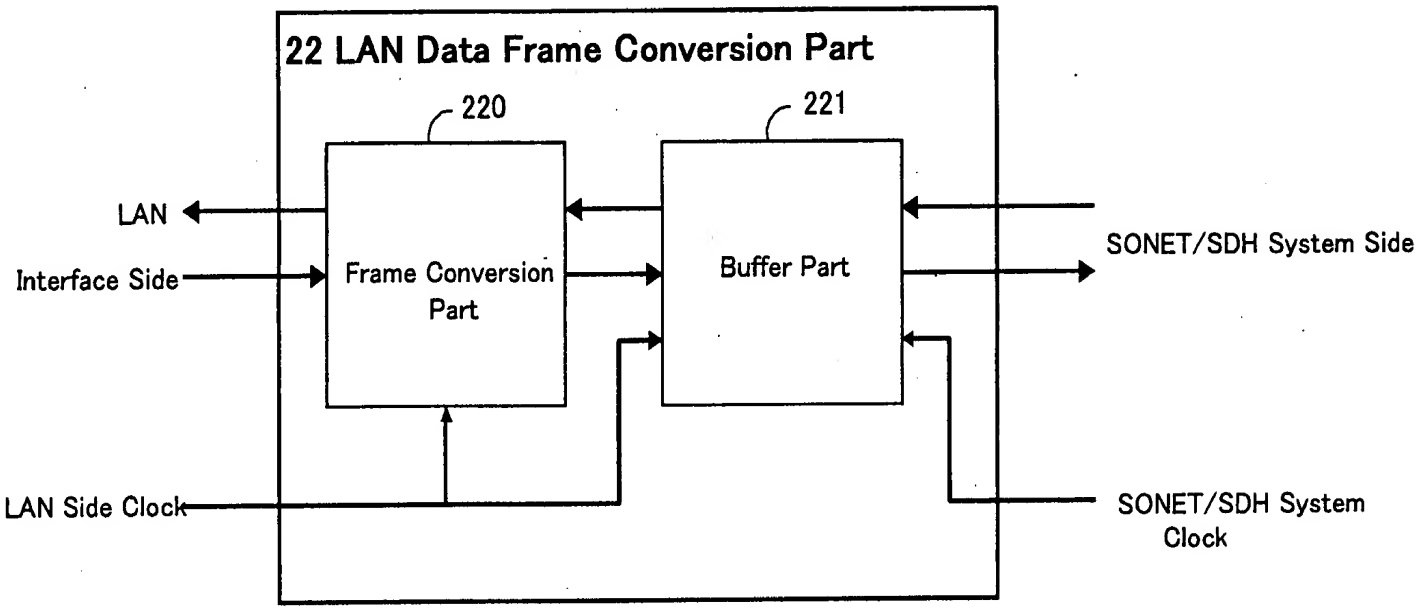

22 LAN Data Frame Conversion Part
220
221
LAN
Interface Side
Frame Conversion Part
Buffer Part
SONET/SDH System Side
LAN Side Clock
SONET/SDH System Clock

FIG. 11A

FIG. 11B

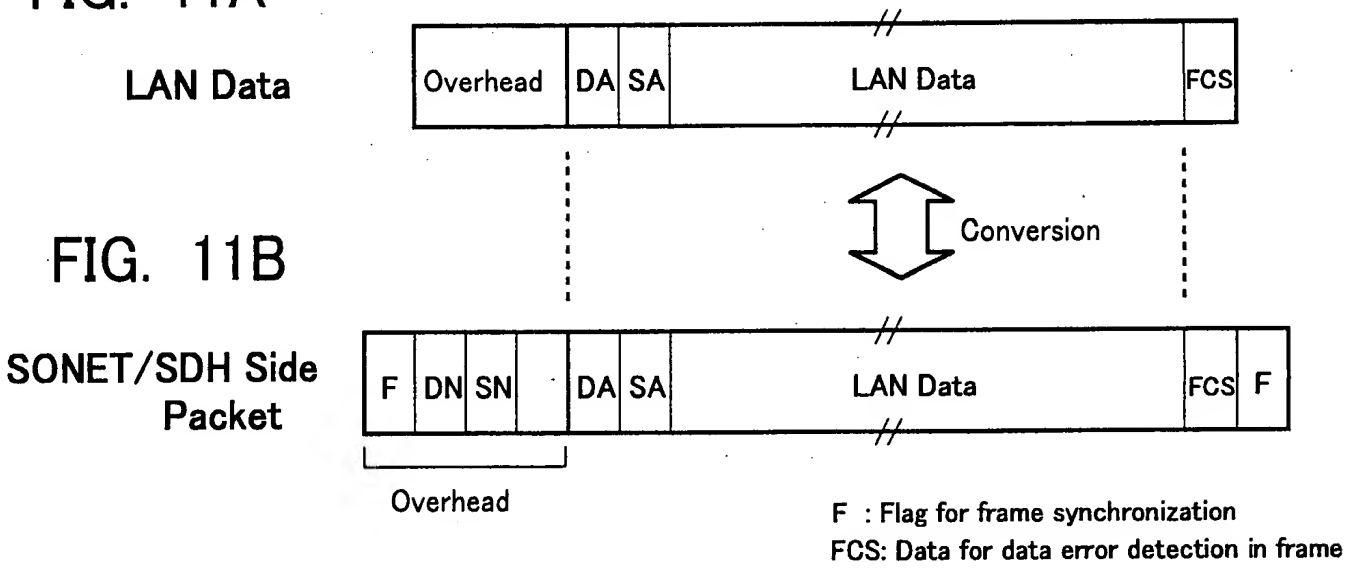


FIG. 12

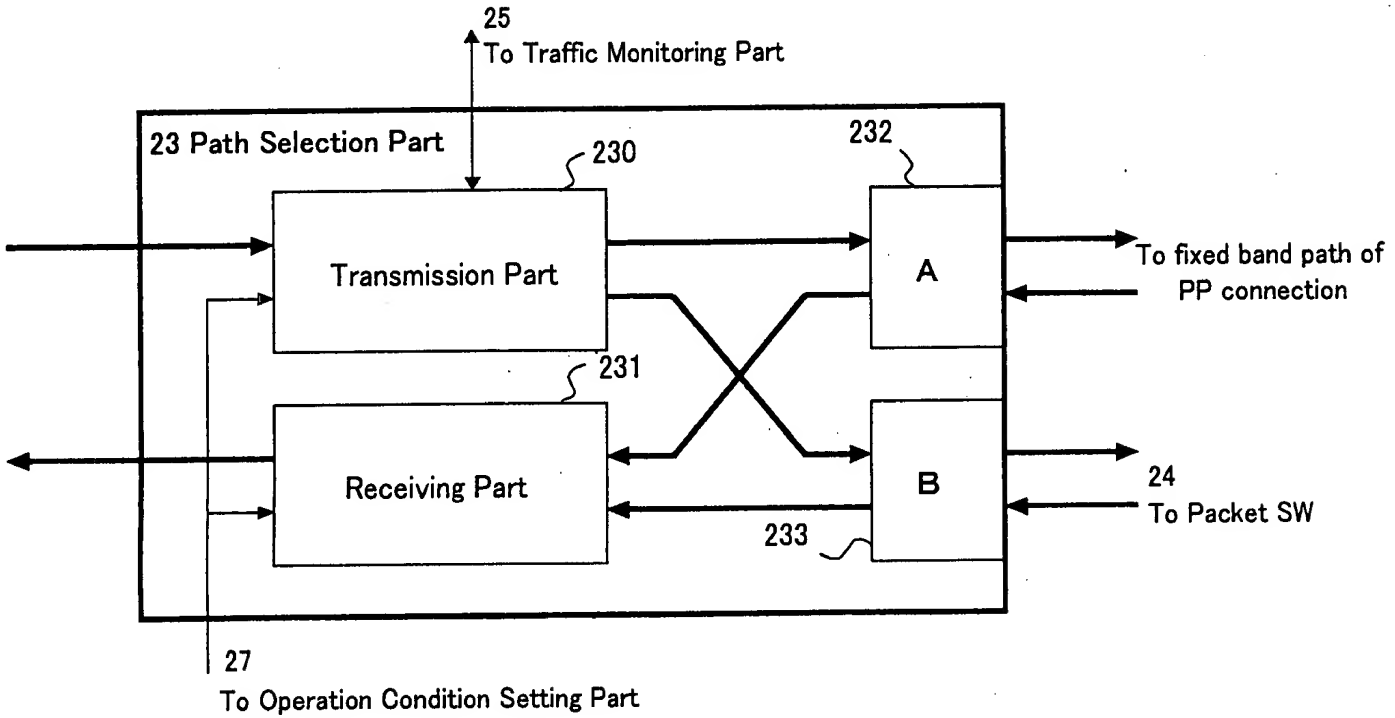

25
To Traffic Monitoring Part
23 Path Selection Part
230
232
Transmission Part
A
To fixed band path of
PP connection
231
Receiving Part
B
24
To Packet SW
233
27
To Operation Condition Setting Part

FIG. 13

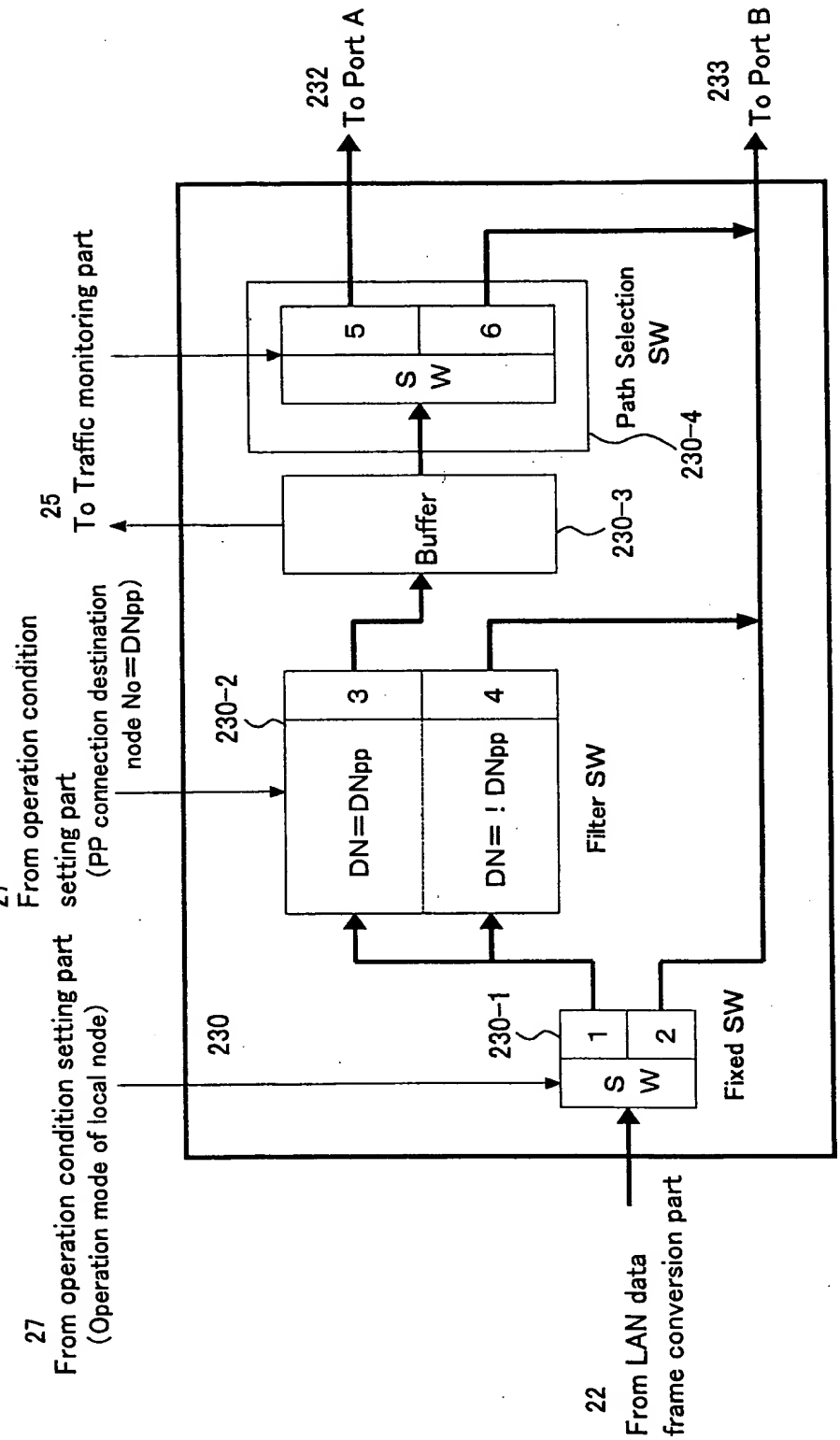

27
From operation condition setting part
(Operation mode of local node)
27
From operation condition
setting part
(PP connection destination
node No=DNpp)
25
To Traffic monitoring part
230
230-1
230-2
230-3
230-4
DN=DNpp
DN= ! DNpp
Filter SW
Buffer
Path Selection
SW
Fixed SW
S
W
1
2
3
4
5
6
22
From LAN data
frame conversion part
232
To Port A
233
To Port B

FIG. 14

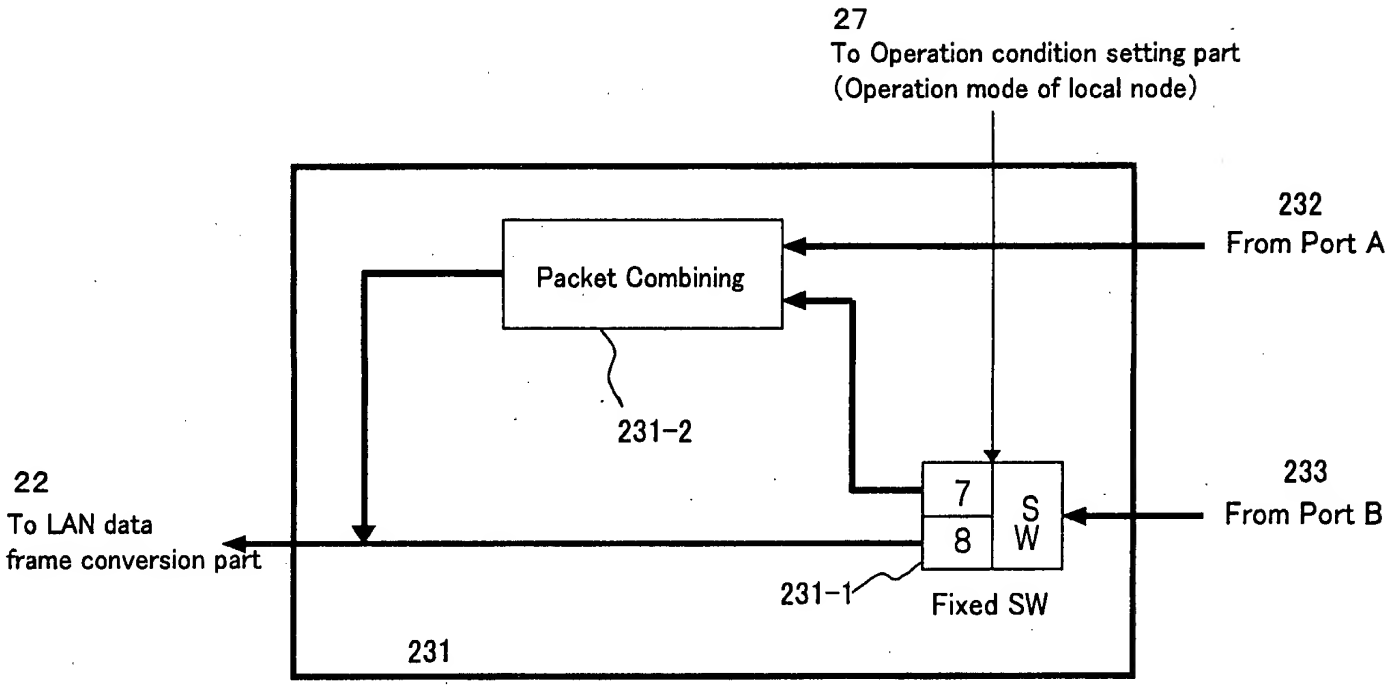

27
To Operation condition setting part
(Operation mode of local node)
232
From Port A
Packet Combining
231-2
22
To LAN data
frame conversion part
233
From Port B
7
8
S
W
231-1
Fixed SW
231

FIG. 15

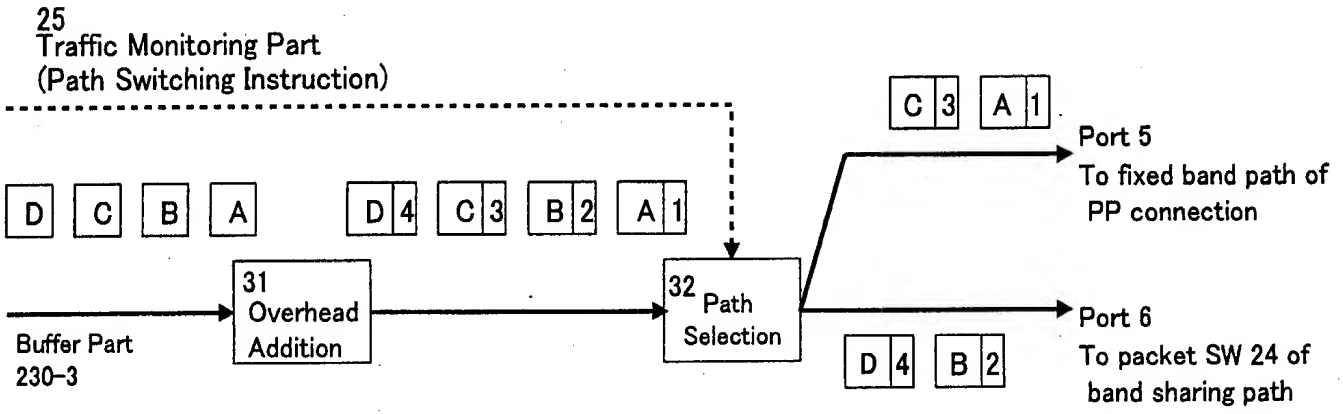

25
Traffic Monitoring Part
(Path Switching Instruction)
D
C
B
A
D 4
C 3
B 2
A 1
Buffer Part
230-3
31
Overhead
Addition
32 Path
Selection
C 3
A 1
Port 5
To fixed band path of
PP connection
D 4
B 2
Port 6
To packet SW 24 of
band sharing path

FIG. 16

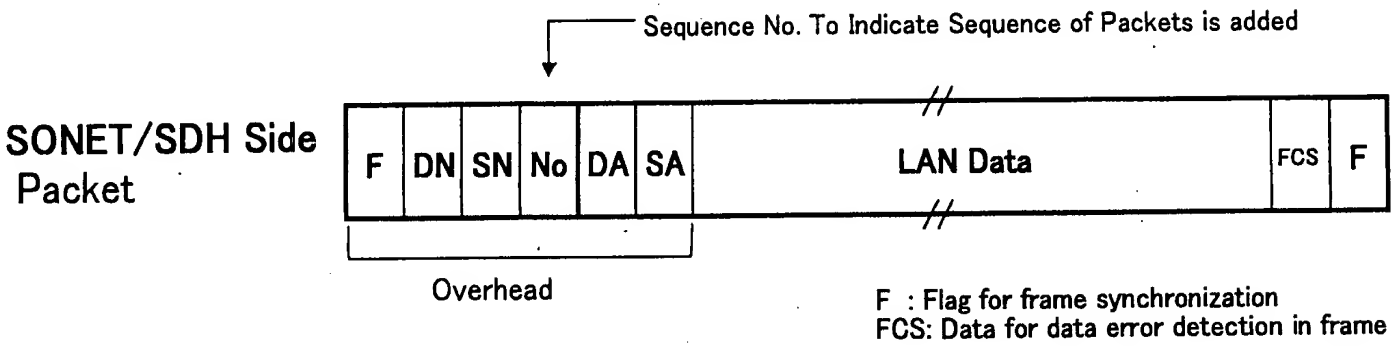

Sequence No. To Indicate Sequence of Packets is added
SONET/SDH Side Packet
F
DN
SN
No
DA
SA
LAN Data
FCS
F
Overhead
F : Flag for frame synchronization
FCS: Data for data error detection in frame

FIG. 17

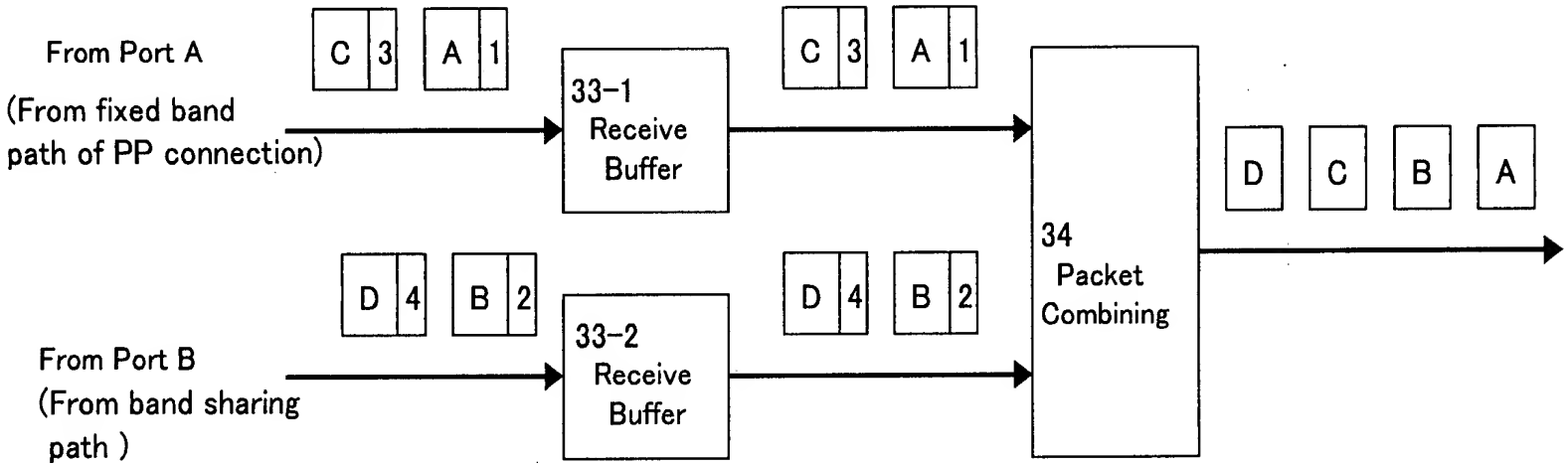

From Port A
(From fixed band path of PP connection)
C 3
A 1
33-1 Receive Buffer
C 3
A 1
From Port B
(From band sharing path)
D 4
B 2
33-2 Receive Buffer
D 4
B 2
34 Packet Combining
D
C
B
A

FIG. 18

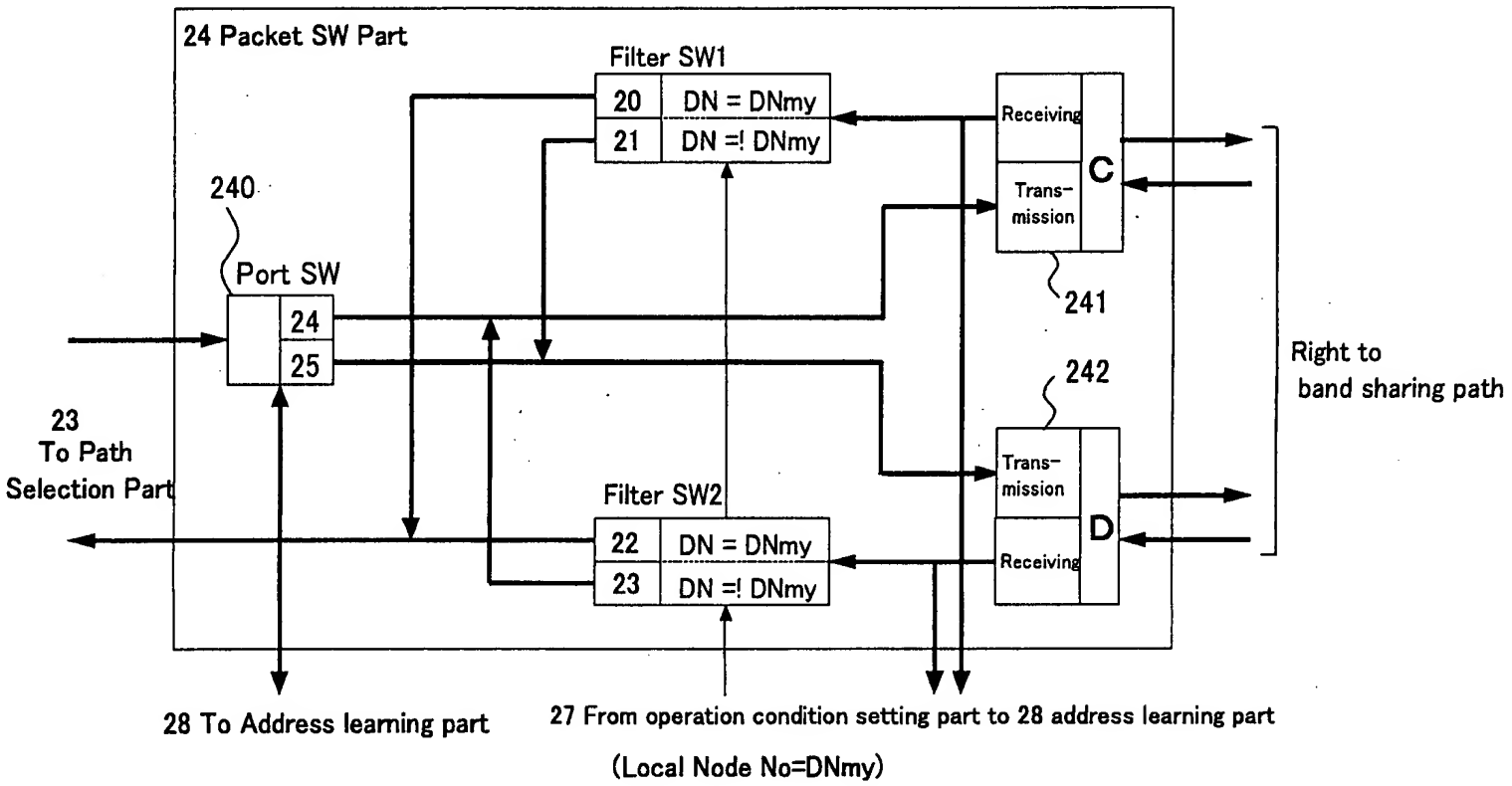

24 Packet SW Part
Filter SW1
20
DN = DNmy
21
DN =! DNmy
240
Port SW
24
25
Receiving
Trans-
mission
C
241
242
Trans-
mission
Receiving
D
Filter SW2
22
DN = DNmy
23
DN =! DNmy
23
To Path
Selection Part
Right to
band sharing path
28 To Address learning part
27 From operation condition setting part to 28 address learning part
(Local Node No=DNmy)

FIG. 19

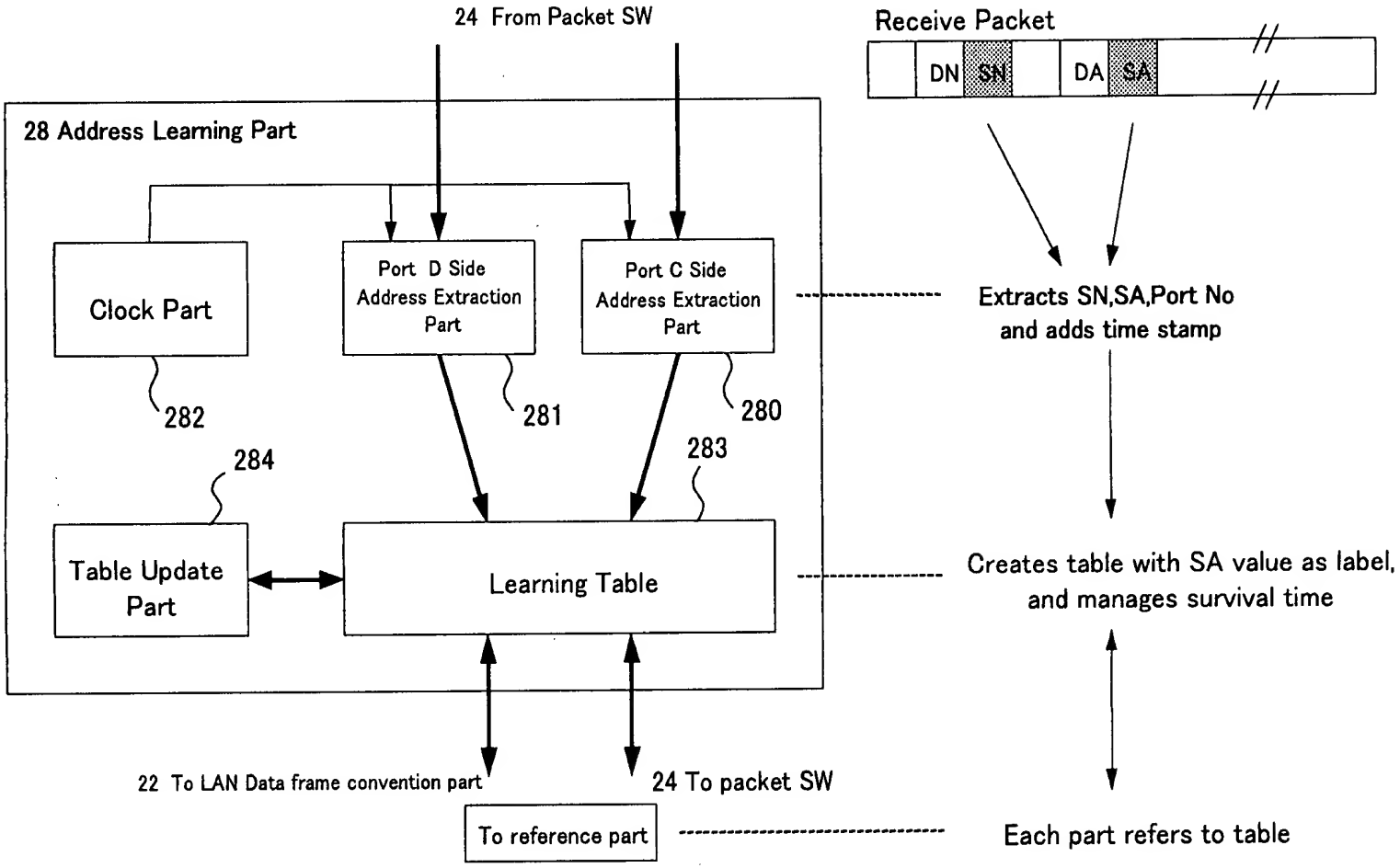

24 From Packet SW
Receive Packet
DN
SN
DA
SA
28 Address Learning Part
Clock Part
Port D Side Address Extraction Part
Port C Side Address Extraction Part
Extracts SN,SA,Port No and adds time stamp
282
281
280
284
283
Table Update Part
Learning Table
Creates table with SA value as label, and manages survival time
22 To LAN Data frame convention part
24 To packet SW
To reference part
Each part refers to table

FIG. 20

Label (SA value from another node) (DA value from local node)	Data 1 (SN value from another node) (DN value from local node)	Data 2 (Node arrangement C or D)	Data 3 (Learning time)
Value 1	01	D	Time Stamp1
Value 2	03	C	Time Stamp2
Value 3	04	C	Time Stamp3
.	.	.	.
.	.	.	.
.	.	.	.

Example of Learning Table at Node 2